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The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 800

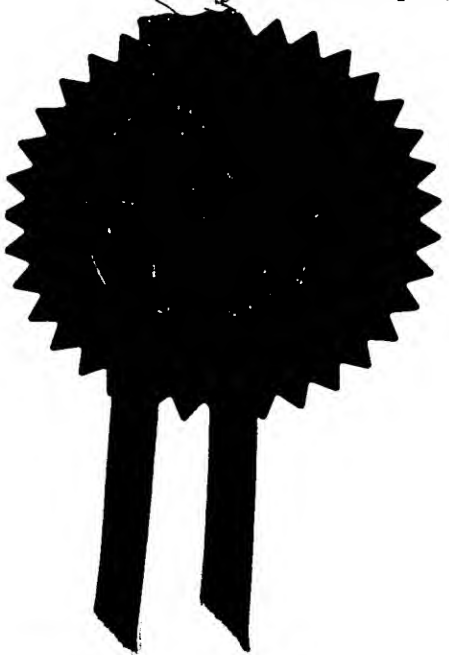
REC'D	02 FEB 2001
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I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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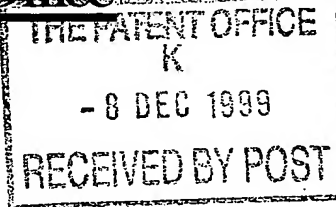
Signed *Ansrews*

Dated 15 January 2001

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Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

1. Your reference

SL/SMR/OML.44

2. Patent application number

(The Patent Office will fill in this part)

9928876.3

8 DEC 1999

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Owen Mumford Limited

Brook Hill,
Woodstock,
Oxford
OX20 1TU.

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

United Kingdom

4413738001

4. Title of the invention

Improvements relating to Combined Lancets and Caps

5. Name of your agent (if you have one)

Wynne-Jones, Lainé & James

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

22 Rodney Road,
Cheltenham,
Gloucestershire
GL50 1JJ.

Patents ADP number (if you know it)

1792001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day / month / year)

n/a

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

n/a

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

n/a

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

5

Claim(s)

-

Abstract

-

Drawing(s)

1 + 1 -

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

John D. H. Jones Date

7th December 1999

12. Name and daytime telephone number of person to contact in the United Kingdom

01242 515807

Mr. Lainé

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

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- Write your answers in capital letters using black ink or you may type them.
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- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

Improvements relating to Combined Lancets and Caps

This invention relates to combined lancets and caps.

Such a combination is described in US 5,324,303. A lancet body is integrally moulded with a cap, initially to
5 conceal the tip of a needle largely embedded in the lancet body. This renders the tip safe while the lancet is handled before use. The cap can be twisted off to reveal the needle tip and then fitted to the forward end of a firing device, with the lancet inserted. It provides a platform
10 which is pressed against the user's skin and an aperture through which the needle tip is momentarily projected when the device is fired.

After use, the lancet should be disposed of safely since the needle will be contaminated. This can easily
15 spread to the cap as well, and so that should be disposed of at the same time. The firing device is not at risk, and can be re-used indefinitely.

It is the aim of this invention to provide an arrangement where the removal of the cap also removes the lancet
20 with its needle tip safely housed inside the cap, so that both can be thrown away together without exposure of the needle tip.

According to the present invention there is provided a combined lancet and cap for a lancet firing device to which
25 the cap can be fitted to provide an apertured platform to bear against the user's skin and through which the tip of the lancet needle is momentarily projected when the device

is fired, the cap and lancet body being integrally moulded in plastics material with the cap concealing the needle tip but being breakable away from the body to expose that tip, wherein the cap is moulded with a shape that requires manual deformation to fit the firing device and wherein, when removed after use, the cap reverts to its original shape and thereby captures and removes the lancet with the needle tip safe within the cap.

Generally, the forward end of the lancet will be circular and the rear end of the cap will be elliptical. Compression along its major axis will cause it to become circular to match the forward end of the firing device. Preferably, the engagement will be by screw thread, but there could be a bayonet type fitting or a snap-fitting, for example.

In the preferred form, the interior of the cap has opposed projections on its minor axis and the lancet body has axially spaced abutments between which the projections can engage when the cap is in its natural shape but which are clear of the projections when the cap is fitted to the firing device. Reducing the major axis increases the minor axis of the elliptical cross-section, thereby moving the projections outwardly where they do not interfere with the forward and reverse motion of the lancet.

The lancet body is preferably shaped to be non-rotative in the firing device. It can be inserted using the cap as a handle, the cap then being twisted to break away from the lancet body. Also, the lancet body will conveniently be

adapted to be retained in a retracted position within the firing device when so inserted. It will therefore be prevented from falling out accidentally before the cap is fitted, and it will be properly located for firing.

5 For a better understanding of the invention, one embodiment will now be described, by way of example, with reference to the accompanying drawing, in which:

Figure 1 is a perspective view of a combined lancet and cap,

10 Figure 2 is a side view of the lancet and cap,

Figure 3 is another side view of the lancet and cap in the direction A of Figure 2,

Figure 4 is a section on the line IV-IV of Figure 2,

Figure 5 is a section on the line V-V of Figure 2,

15 Figure 6 is a section on the line VI-VI of Figure 2, and,

Figure 7 is a section on the line VII-VII of Figure 2.

A lancet 1 has a plastics body 2 integrally moulded with a cap 3. The body 2 contains a needle 4 whose tip 5
20 projects into a neck 6 which connects the body 2 and the cap 3. The lancet is designed to be fired by a device (not shown) whose forward end the cap 3 can fit.

The lancet 1 is mostly of cruciform shape throughout its length, but shortly beyond its mid-point from the cap 3
25 there are two axially spaced circular ribs 7 and 8 of a radius that makes them slightly proud of the cylindrical envelope of the rest of the body 2. There are the usual diametral passages 9 left by the moulding process (they are

necessary for holding the needle 4) and towards the rear end there is a deep radial socket 10.

The cap 3 is of cup-like form with a circular base 11 having a central aperture 12. From the rim of the base 11 it flares outwardly, developing into an elliptical cross-section, and at about the mid-length there is a break into a portion 13 of constant elliptical cross-section. The neck 6 is situated at this break. Internally of this portion 13 there are two opposed lugs 14 on the minor axis of the elliptical cross-section. These are at the ends of longitudinal slots 15 extending from the base 11 which are necessary for simplifying the mould.

For use, the combined lancet and cap is inserted into the forward end of a firing device using the cap 3 as a handle. The lancet is captured by means of interference between its outside diameter and the bore of the lancet holder of the device, and is held from rotation by the action of internal rib within the lancet holder engaging with the cruciform shape of the lancet body. The cap 3 is then twisted, and this breaks it away from the lancet body 2 at the narrowest point of the neck 6, leaving the tip of the needle 5 exposed. The open end of the cap 3 is then presented to the forward end of the firing device, the portion 13 being squeezed along the major axis of the elliptical cross-section. The nature of the plastics material and its thickness allow it to be deformed into a circular cross-section. It can then co-operate with the forward end of the firing device and, for example, screw on

to it.

The device is used by placing the base 11, serving as a platform, against the skin, and firing the lancet so that the needle tip momentarily projects through the aperture 12.

5 The lancet bounces back so that the tip is safely within the cap. The lugs 14 are then opposite the gap between the ribs 7 and 8. The cap is removed and, if it is an unscrewing action, the length of the thread is such that the lugs 14 will remain in registry with the gap between the ribs 7

10 and 8 until the cap comes clear. Alternatively, if the lancet cap is clipped into the front of the device then it may be removed by sliding the ejector of the device forwards, which then acts on the edge of the open end of the cap, pushing it away from the device. As this happens the

15 portion 13 immediately reverts to its elliptical cross-section and the lugs 14 close towards each other and engage between the ribs 7 and 8. The lancet 1 is therefore captured by the cap 3 with the needle tip safely inside. It can then be thrown away as a single item.

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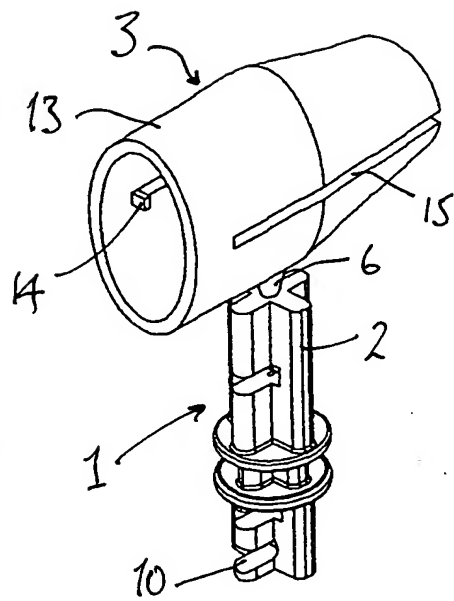


FIG. 1

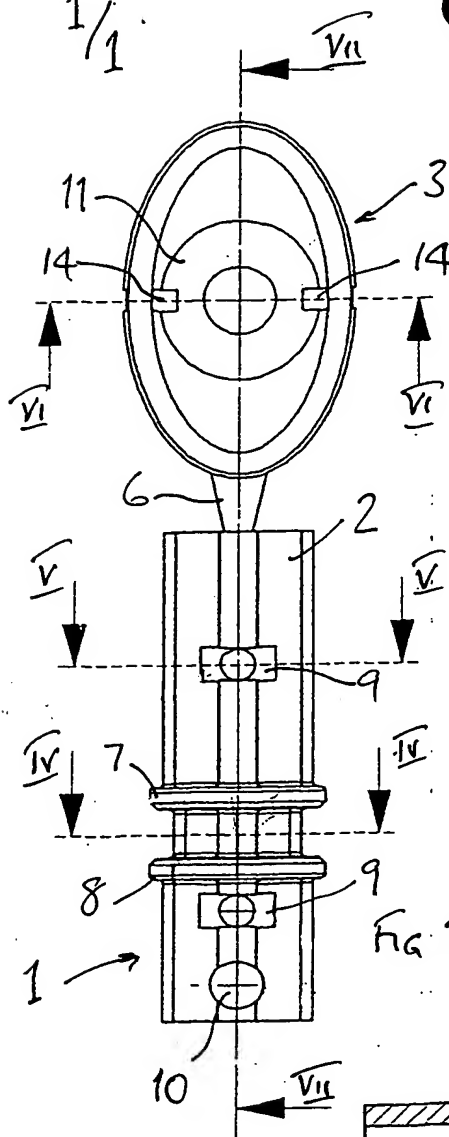


FIG. 2

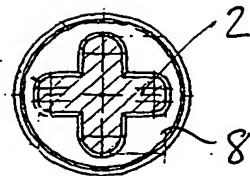


FIG. 4

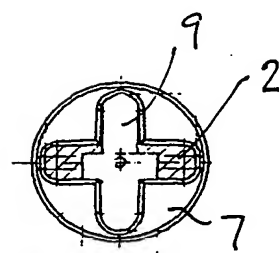


FIG. 5

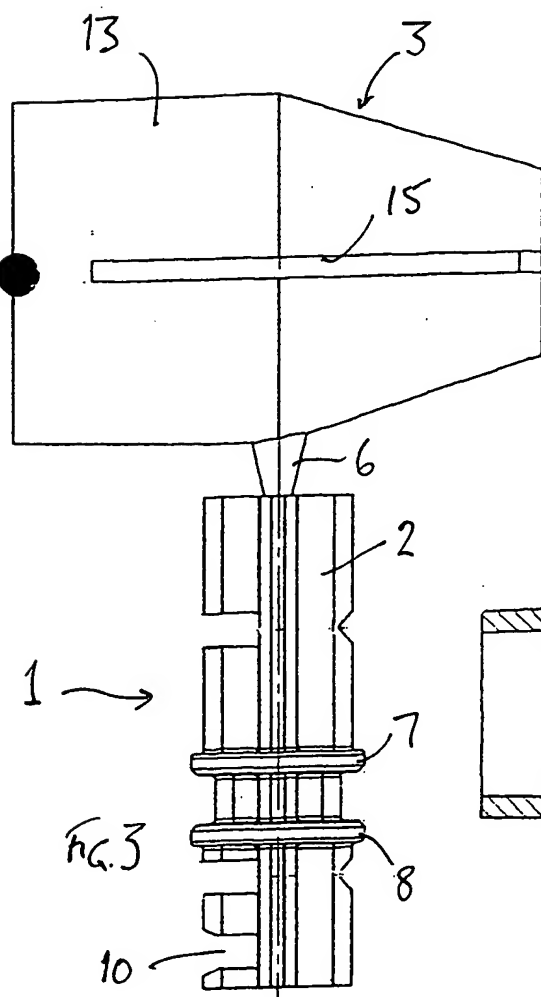


FIG. 3

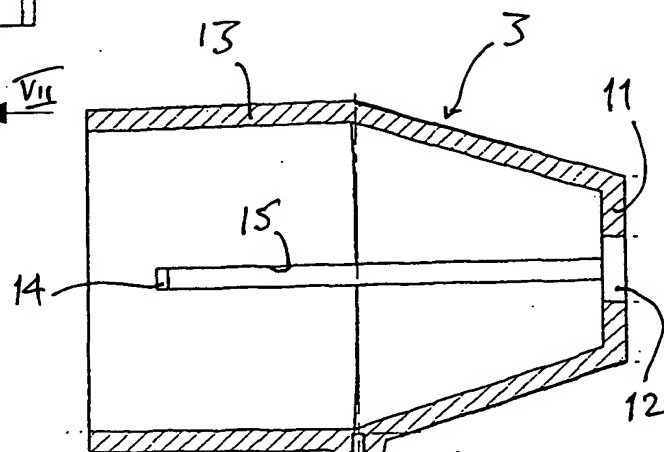


FIG. 6

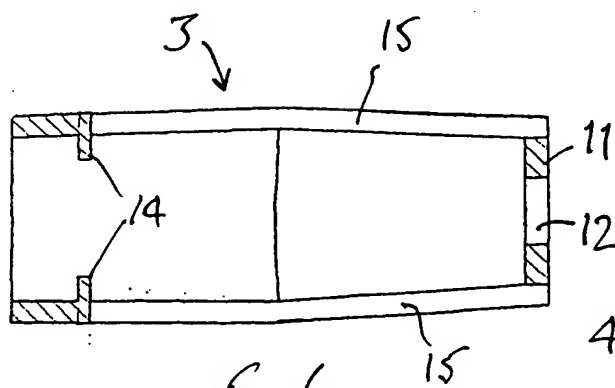


FIG. 7

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